

MACINA . BOSE . COPELAND and ASSOCIATES, INC

CONSULTING ENGINEERS AND LAND SURVEYORS

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ADDENDUM NO. 6

CITY OF SAN ANTONIO CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PROJECT NAME: <u>CULEBRA 58F PHASE IIB</u>

DATE: <u>JUNE 8, 2011</u>

This addendum shall be included in and be considered part of the plans and specifications for the above named project. The contractor shall be required to sign an acknowledgement of the receipt of this addendum at the time he receives it and returns signed form with the bid package.

CIMS PROJECT NO.: 40-00050

This Addendum is for the purpose of answering several questions which have been given to CIMS by potential Bidders. See accompanying four pages.

The Bidder's attention is called to the accompanying revision of the SAWS portion of the CIMS' "025" form. Note that we felt it necessary to revise the bid quantity of Item #852.3 "Extra Depth Manhole", and we have edited Item No. 900.1 to specify that "pipe bursting" is for the 30-inch pipe.

Find attached a copy of SAWS Specification #3000 concerning handling and disposal of abandoned AC water pipe; provided herewith for Bidder's information.

ROBERT A. LIESMAN

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ADDENDUM #6 ATTACHMENTS

Question: There has been a question concerning our specification for "Landlock 300 or Approved

Equal" HPTPM.

Answer: We are not wedded to any specific product; simply trying to clarify the type of product

that we believe is necessary to successfully protect the earth channel from predicted high velocities during the design storm event. The general specification is for an

HPTRM meeting CIMS specifications.

Question: What is the required depth of organic topsoil referenced on Sheet #13?

Answer: Four inches (4")

Question: Is the cost of seeding and irrigation to be included in price for "Creekbank"

Stabilization"?

Answer: YES

Question: For the earthen channel between stations 61+25 and 14+65, what depth of soil is

required to be placed over the channel liner?

Answer: one-half inch (½")

Question: On sheet #13, are both "rooted plants" and SRB, Class 1, Type C needed?

Answer: NO. We are expecting the Contractor to re-establish grass; looking for natural events

to result in establishment of other "rooted plants".

Question: If drought conditions persist, will SAWS allow watering of the specific regulation?

Answer: Contractor is to follow watering regulations during vegetation establishment period. If

vegetation cannot be established due to conditions beyond the control of the contractor, then the Contractor and City's representative will work jointly with SAWS to resolve

any issue concerning watering and/or necessary permits if the need arises.

Question: Can SAWS provide current flow rate for the existing 30" sewer?

Answer: We will inquire, but you shall be prepared to handle full flow capacity for a 30" line at

slope of 0.40%.

Questions: Is seeding by broadcast or hydromulch allowed, as noted on Sheet 9?

Answer: YES, but the Contactor will have to demonstrate to the Inspector's satisfaction that his

proposed method of broadcast is effective.

Clarification: SWPPP activities as required to satisfy TPDES criteria is a Lump Sum item for the

entire area of disturbance.

Question: What is the warranty period for this project?

Answer: Twelve (12) months from CIMS acceptance.

Question: What is the spec for "Large Rock Rip-Rap"?

Answer: 12 inches minimum dimensions; 18 inches maximum dimension

Question: What is Special Specification No. 999.2?

Answer: It is two-page "clarification" of what work is expected under the bid item – disturbed

with Addendum No. 1. We are including it with this Addendum #6.

Question: How far away is the City disposal site for undesirable excavated material?

Answer: The material identified (by CIMS) as Class 2 Non-hazardous waste shall be hauled to

either Covel Gardens or Tessman Road landfills – as directed by CIMS Environmental

Management Division.

Question: Why did the Engineer not "cloud" plan changes?

Answer: The engineer felt that prolific clouding would conflict with the many significant

delineations in the plans and that "clouding" ought to be reserved for any post-bid

changes.

Questions: On Sheet #13, what is the significance of the underlining of certain words?

Answer: Simply to call the bidder's attention to certain facts or descriptors.

Question: Since there are only pay items number 110.2.2 and 110.5 for "Environmental" work,

does that mean that other environmental services in the Special Specification are not

required.

Answer: NO, all special services may be necessary to properly accomplish the work; we chose to

limit Pay Items to Two; other related work is subsidiary to either or both of the two Pay

Items.

Question: Where are the tailored requirements for the Project's Office?

Answer: Reference CIMS Special Specification No. 526, as amended June 2010, and available

on their web site.

Question: Will the (existing) clearing at the fill site be sufficient for the total quantity of excess

material?

Answer: Probably NOT; the Bidder shall expect to clear as required to accomplish fill

placement.

Question: Does haul-off of (undesirable) excess material in the "Creekbank Stabilazation" area

fall under the same criteria as other material on the project?

Answer: YES

Question: Is the surface of the four foot toe wall on the rip rap considered a pay quantity?

Answer:

YES

Question: Is Item Number 300.1 for the drop structure only, while other channel concrete

measured as "Rip-Rap"

Answer: YES

Question: Can the ¼" (contraction) joint on Sheet number 4 be hand tooled?

Answer:

Question: Is 4" gravel subgrade filler required as shown on the standard rip-rap defaults?

Answer: YES for bidding, but the Inspector might waive requirement in the field for the extent at

subgrade level.

Question: Is WWF acceptable in the rip-rap as noted on the standard rip-rap details?

Answer: YES

Question: Can the area under Culebra Road (bridge) be undercut to facilitate under-passage of

heavy equipment?

Answer: NO; not unless the Contractor can demonstrate through structured analysis that such

could pose no possibility of damage to the bridge.

Question: Per SAWS Item No. 850 "SS Structure" no mention is made for separate payment for

height. Will height above 6 vf of a structure be paid under Item 852.3?

You are correct; we did (incorrectly) include extra depth of <u>Structures</u> in our quantity Answer:

for Item No. 852.3. SAWS wishes to have structures paid "per each", regardless of depth. We are attaching here-to a second edit of SAWS pay quantities on bid Form

"025", with reduced quantity for Item No. 852.2.

Ouestion: When will amended SAWS plan sheets be posted on City website.

Answer: They will not; amended plans are available from the Consultant who has sent an email

to each plan set purchaser requesting of them direction about the manner in which they

wish to obtain a copy of said amended sheets.

Ouestion: Where are detail sheets for sewer and water work?

SAWS directed that no detail sheets be included for their work. Contractor reference is Answer:

SAWS' published Standard Details.

Question: SS manhole in Culebra Road is paved-over; will CIMS or SAWS expose and raise this

Manhole for contractor's use?

Answer: If access to this manhole is determined to actually be necessary, then exposing and

raising of the manhole will be handled at SAWS expense, most likely as a Change Order

to the Contractor.

Question: Will Contractor be allowed to close two lanes of Culebra Road in order to bypass pump

waste water to the existing manhole on the 30" line in Culebra Road?

Answer: Short term closing of two of the driving lanes of Culebra Road may be permitted,

subject to application to the City's ROW Management Department and submittal to them of a satisfactory traffic control plan. Closing of more than a single lane for an appreciable length of time will not be permitted. The proposed duration of bypass pumping to the subject manhole will be a critical component of an application for lane closure. We have added a NOTE to plan sheet #50, which NOTE speaks to this

question. Edited plan sheet #50 will be emailed to all plan holders by the Consultant.

Question: Will the Engineer/SAWS provide SAWS block maps to Bidder?

Answer: NO, but maps are available at SAWS offices.

Question: Due to the extent and flow rate of bypass pumping required, will SAWS waive normal

30-day period of delay after pipe installation and prior to acceptance of flow in the new

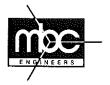
main?

Answer: YES

Question: Will the Pipe Burst portion of the replacement main be PVC as well?

Answer: NO; SAWS specifications dictate use of HDPE. See SAWS Spec. Item No. 900.3(d)(6).

Clarification: Bypass pumping shall provide for a maximum expected flow of 15.42 MGD.



CITY OF SAN ANTONIO 025 UNIT PRICING FORM

PROJECT NAME: CULEBRA #58F PHASE IIB (SAWS - SEWER AND WATER WORK) PROJECT NO. 40-00050

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Updated: 06/03/11 Updated: 06/07/11 *852.3 Updated: 06/08/11 **900.1

CITY OF SAN ANTONIO 025 UNIT PRICING FORM

PROJECT NAME: CULEBRA #58F PHASE IIB (SAWS - SEWER AND WATER WORK) PROJECT NO. 40-00050

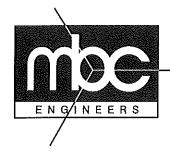
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	844		2" Water Main Blow-off	EA	-		
	3000.14		Removal, transportation and Disposal of AC Pipe	SI	-		
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						TOTAL BID AMOUNT	

e unit prices shown on this complete computer print-out for all of the bid items and the alternates contained in	d will be tabulated using these unit prices and no other information from this print-out.	and agrees that the total hid amount shown will be read as its total hid and further agrees that the official total hid
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Acknowledged and agrees that the total bid amount shown will be read as its total bid and further agrees that the official total bid amount will be determined by multiplying the unit bid prices shown in this print-out by the respective estimated quantities shown in the proposal and then totaling all of the extended amounts.

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Date:	
Signed:	Title:

Updated: 06/03/11 Updated: 06/07/11 *852.3 Updated: 06/08/11 **900.1



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CULEBRA 58F, PHASE IIB SPECIAL SPECIFICATION FOR "CREEK BANK STABLIZIATION" BID ITEM NO. 999.2

For purpose of pricing and payment "Creek Bank Stabilization" refers to all the work necessary in order to establish a length of stabilized stream bank along <u>one side</u> of that perennial stream bed identified by the Corps of Engineers (in general) and these plans (more specifically) as "Jurisdictional Waters". Work under this item shall include:

- (a) All clearing and grubbing necessary to allow reconstruction.
- (b) All grading necessary to create a stream bank section as shown on Plan Sheet No. 13.
- (c) Haul-off and disposal of all excess excavated material.
- (d) Installation of rock riprap stream bank protection as shown on the cross section detail on Plan Sheet No. 13.
- (e) All necessary care during this construction to avoid Jurisdiction Waters area(s) not being so-stabilized.

Soil Retention Blanket specified over disturbed areas has been made a separate cost item.

Note that this exercise is intended by CIMS to be limited in scope to approximately that length of single-sided bank stabilization shown on the bid quantity. Appreciable disturbance of a greater length of stream bank, unless such is expressly – directed by CIMS, shall be deemed unwarranted incursion into the Jurisdictional Waters area and require appropriate remediation by the Contractor without benefit of extra payment.

Those Lengths of stream bank to receive such stabilization are identified on Plan Sheets No. 12 and 13. CIMS reserves the prerogative to alter those locations, add to the desired length of stabilization, or deduct from that length up to a maximum difference of 25% without effect on the per LF bid price for such work. CIMS shall, upon the Contractor's request conduct a site inspection with the Contractor after award of Contract but at least three days prior to the Contractor's desired on-set of this phase of work and confirm those lengths of stream bank to receive such stabilization.

Payment to the Contractor for work under this pay item shall be on a per-linear-foot of stabilized stream bank on one side.

ITEM NO. 3000

SPECIAL SPECIFICATIONS FOR HANDLING ASBESTOS CEMENT PIPE

This item shall govern for the removal, handling, disturbance, and disposal of asbestos cement (AC) pipe and other asbestos containing materials (ACM) related to the AC pipe work. AC pipe is also known as transite pipe. Since buried AC pipe typically contains approximately 15% to 20% chrysotile and crocidolite asbestos, it is considered to be an asbestos-containing material. The material is classified as non-friable, unless broken at which time its classification changes to friable ACM. The removal and/or disturbance of this material is governed by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the Occupational Safety and Health Administration (OSHA).

3000.1 Description: This item shall consist of the handling, disturbance, removal and disposal of AC water pipe, joints, wrappings and other ACM. In order to comply with NESHAP and OSHA regulations, this project will require workers with specialized training using wet work procedures to cut and remove AC pipe, AC pipe joints, valves (any type) containing ACM and surrounding soils containing ACM. A Texas Department of Health (TDH) licensed Asbestos Consultant shall develop the asbestos work practices and monitoring in the Contractor's Health & Safety Plan to be reviewed by SAWS Environmental Division and City of San Antonio (COSA) Environmental representatives. It is the contractor's responsibility to obtain the services of a licensed Asbestos Consultant authorized in the State of Texas and this work shall be considered subsidiary to this item. Any other ACM encountered that has not been identified by the SAWS inspector or not shown on SAWS plans will be not be authorized for payment. Any other disturbance, handling, or disposal of AC water pipe that is necessary due to authorized work by any other agency will be paid for by that agency under a different special specification and a different bid item number.

To meet and/or exceed NESHAP and OSHA guidelines, the contractor will subcontract the AC water pipe handling to an Environmental Protection Agency (EPA) accredited and TDH licensed Asbestos Abatement Contractor and TDH Licensed Asbestos Consultants.

An alternative method would entail the disturbance, handling, repair, and disposal of the AC pipe by an authorized TDH licensed worker with the required course of an asbestos worker awareness class or a TDH required asbestos training course preparing workers to handle disturbed ACM. Review of the asbestos work practices and monitoring in the Contractor's Health & Safety Plan will still need to be performed by a licensed TDH Asbestos Consultant.

NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become "regulated asbestos containing material" or RACM. This means that if at least 260 linear feet of the AC pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. If the Texas Department of Health (TDH) limit of 260 LF is exceeded, it will be the responsibility of the contractor will be responsible for the TDH administrative fee. The asbestos consultant shall be responsible for submitting the TDH notification with copies also submitted to SAWS Environmental Division and the City of San Antonio Environmental Division, if the quantity of 260 LF is exceeded.

During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. If the generated AC pipe debris is not properly cleaned up. Then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to SAWS Environmental Division and City of San Antonio Environmental Division representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS Environmental Division and COSA Environmental representatives by the contractor's consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

3000.2 Definitions: The following terms are defined for the nature of this work.

A. Air Monitoring - The process of measuring the fiber concentration of a known volume of air collected during a specific period of time. The analysis procedure utilized for asbestos is the NIOSH Standard Analytical Method for Asbestos in Air, Method 7400. Transmission electron microscopy (TEM) may be utilized for lower detection limits and/or specific fiber identification.

- B. Air Monitoring Technician The person licensed by the Texas Department of Health to conduct air monitoring for an asbestos abatement project or related activity. The Air Monitoring Technician may only obtain air samples, and may only perform analysis of air samples with an upgraded Air Monitoring Technician License, which includes completion of the NIOSH-582 equivalent course. The air-monitoring technician shall be an employee of a licensed asbestos laboratory or a licensed Asbestos Consultant agency.
- C. Amended Water Water to which a surfactant has been added.
- D. Asbestos The asbestiform varieties of serpentines and amphiboles. Specifically, chrysotile, crocidolite, grunerite, amosite, anthophyllite, actinolite, and tremolite.
- E. Asbestos Containing Material (ACM) Material or products that contain more than 1.0% of any kind of asbestos.
- F. Asbestos Containing Waste Material asbestos containing material or asbestos contaminated objects requiring disposal
- G. Authorized Personnel Any person authorized by the Contractor and required by work duties to be present in the work area or other regulated areas.
- H. Authorized Visitor SAWS representatives, and any representative of a regulatory or other agency having jurisdiction over the project.
- I. Asbestos Consultant That person licensed by the Texas Department of Health to perform the following asbestos related functions:
 - (1) Project design; (2) Asbestos surveys and condition assessment of ACM; (3) Asbestos Management Planning; (4) The collection of bulk material samples, airborne substance samples and the planning of sampling strategies; (5) Owner-representative services for asbestos abatement projects or O&M programs, including air monitoring and project management; (6) Consultation regarding regulatory compliance and all aspects of technical specifications and contract documents; and (7) The selection, fit testing, and appropriate use of personal protection equipment and the development of asbestos related engineering controls.
- J. Abatement Contractor The company, agency, or entity licensed by the Texas Department of Health that has been retained by SAWS or the Contractor to perform asbestos abatement and other associated functions.

- K. Class II Asbestos Work (OSHA Standard) Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestoscontaining wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
- L. Competent Person One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them.
- M. Encapsulant A specific adhesive designed to lock down and minimize the fiber release of asbestos containing materials and asbestos contaminated materials.
- N. Friable Asbestos Asbestos-containing material, which can be crumbled to dust, when dry, under hand pressure, and includes previously nonfriable material after such previously non-friable material becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.
- O. HEPA Filter A high efficiency particulate air filter capable of removing particles > 0.3 microns in diameter with 99.97% efficiency.
- P. NESHAP The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
- Q. NIOSH The National Institute for Occupational Safety and Health.
- R. OSHA The Occupational Safety and Health Administration.
- S. Regulated Area An area established by the Contractor to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.
- T. Regulated Asbestos-containing Material (RACM) (1) Friable asbestos material; (2) Category I non-friable ACM that has become friable; (3) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or, (4) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act on the material in the course of the demolition or renovation operations regulated by 40 CFR Part 61, Subpart M.

- U. Staging area A pre-selected area where containerized asbestos containing waste material will be placed prior to removal from the project site.
- V. Surfactant A chemical wetting agent added to water to improve penetration.
- 3000.3 Applicable Standards and Guidelines: All work under these specifications shall be done in strict accordance with all applicable Federal, State, and local Regulations, standards, and codes governing asbestos abatement and any other trade work done in conjunction with the asbestos abatement. Work activities must also comply with these and other SAWS and City of San Antonio Specifications related to health and safety.

The most recent edition of any relevant regulation, standard, or code shall be in effect. Where there exists conflict between the regulations, standards, codes, or these specifications, the most stringent requirements shall be utilized.

The Contractor shall comply with, at minimum, the following specific regulations:

- A. Occupational Safety and Health Administration (OSHA) including but not limited to:
 - 1. Title 29 Code of Federal Regulations Section 1910.1001 General Industry Standard for Asbestos.
 - 2. Title 29 Code of Federal Regulations Section 1910.134 General Industry Standard for Respiratory Protection.
 - 3. Title 29 Code of Federal Regulations Section 1926 Construction Industry.
 - 4. Title 29 Code of Federal Regulations Section 1910.2 Access to Employee Exposure and Medical Records.
 - 5. Title 29 Code of Federal Regulations Section 1910.1200 Hazard Communication.
- B. Environmental Protection Agency (EPA) including but not limited to:
 - 1. Title 40 Code of Federal Regulations Part 61 Subpart M National Emission Standard for Asbestos.
- C. Texas Department of Health including but not limited to:

- 1. Texas Department of Health Texas Administrative Code, Title 25, Chapter 295, Subchapter C Texas Asbestos Health Protection.
- 2. Texas Department of Health Texas Administrative Code, Title 25, Chapter 325 Texas Solid Waste Regulations.
- 3. Texas Department of Health Texas Civil Statutes, Article 4477-A, Section 12, General Provisions 295.31 to 295.73.
- D. American National Standards Institute (ANSI)
- E. American Society for Testing and Materials (ASTM)
- F. Department of Transportation HM 181

3000.4 Submittals and Notices

- A. At the Pre-construction Conference/Meeting, all training records, certifications, medical records, and laboratory qualifications will be submitted for review to SAWS Environmental Division and COSA Environmental representatives as well as the following:
 - 1. In order to comply with the SAWS Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, SAWS Special Specifications, Item Number 3000, and state requirements. As such, Contractors submitting bids for the project must have a Texas Department of Health (TDH) licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Plans submitted by the Asbestos Consultant must include the person or firms name, address, phone number and TDH certification. Health and Safety plans for working with ACM must address the guidance provided in these special specifications. The guidance provided in this special specification is not intended and does not constitute asbestos abatement project design as described under TAC 25, Chapter 295.47 (TDH asbestos regulations).
 - 2. Submit documentation satisfactory to SAWS Environmental Division and COSA Environmental representatives that an Initial and/or Negative Exposure Assessment in accordance with OSHA Standard 29 CFR 1911 has or will be performed (as applicable).

- 3. Submit documentation satisfactory to SAWS Environmental Division and COSA Environmental representatives that the Contractor's employees, including foremen, supervisors and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of asbestos disturbance activities, have received adequate training in compliance with applicable rules and regulations.
- 4. Submit documentation to SAWS Environmental Division and COSA Environmental representatives of a respiratory protection program for affected employees as per OSHA Standard 29 CFR 1910.134.
- 5. Submit documentation to SAWS Environmental Division and COSA Environmental representatives from a physician that all personnel who may be required to wear a respirator are medically monitored to determine whether they are physically capable of working while wearing the required respiratory protection without suffering adverse health effects. In addition, document that personnel have received medical monitoring as is required in compliance with applicable rules and regulations.
- 6. Submit to SAWS Environmental Division and COSA Environmental representative's documentation of respirator fit testing for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Standard 29 CFR 1910.134. Optionally, the fit testing may be quantitative in nature.
- 7. Name of OSHA monitoring Consultant/Lab. The Contractor will be responsible for air monitoring as required to meet OSHA Requirements.
- 8. Submit proof satisfactory to SAWS Environmental Division and COSA Environmental representatives that required permits, site location and arrangements for transport and disposal of asbestos containing waste materials have been made.
- B. During Asbestos Disturbance Activities:
 - 1. Submit copies to SAWS Environmental Division and COSA Environmental representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for

- the AC pipe and provide copies to SAWS Construction Inspections for final payment.
- 2. Upon completion of the AC pipe project an abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS Environmental Division and COSA Environmental representatives by the contractor's consultant.

3000.5 Construction Requirements

- A. The Work includes all Work specified herein, to include mobilization and demobilization, labor, materials, overhead, profit, taxes, transportation, disposal fees, administrative fees incidental cost, etc. Estimating areas, quantities, weight, etc., are the sole responsibility of the Contractor.
- B. The Contractor shall remove, seal, transport and dispose of all impacted asbestos-containing materials in compliance with all current Federal, State and local regulations, laws, ordinances, rules, standards and regulatory agency recommended requirements. Asbestos disturbance and/or removal activities shall be conducted by properly trained, accredited, and licensed personnel using proper personal protective equipment.
- C. The Contractor shall notify SAWS and City representatives, if applicable, at least 72 hours in advance prior to beginning removal and/or disturbance of the AC pipe. AC pipe disturbance shall be conducted during regular business hours, Monday-Friday. No weekend work of AC pipe disturbance is allowed, unless special circumstances require the contractor to do so.
- D. Time is of the essence in removing the asbestos-containing materials from the project area. All work must be completed within the time period specified. SAWS and the COSA representative will be responsible for coordinating this work in high-density areas, such as schools, church facilities, and residential areas.
- E. All required notifications required to state regulatory agencies will be made by the Contractor with a copies provided to SAWS and City representatives, including but not limited to the TDH Demolition/Renovation Notification Form. If 260 linear feet or greater of AC pipe will become crushed, crumbled or pulverized, then the project is subject to NESHAP regulations and a Demolition/Renovation Notification

Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

- F. The Contractor shall have an on-site supervisor, who is an OSHA Competent Person, present on the job site at all times that the work is in progress. This supervisor shall be thoroughly familiar with and experienced at asbestos disturbance and other related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all applicable EPA, OSHA, NIOSH and TDH requirements and guidelines.
- G. Prior to commencing any preparation of the work areas for asbestos disturbance, the Contractor shall post all required documents, warning signs and, as necessary, erect physical barriers in order that the work area may be secured.
- H. The Contractor has sole and primary responsibility for the "means and/or methods" of the work and obligation to SAWS to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work. Certain work practices for AC pipe disturbance are prohibited as per Section 3000.10.B.1.
- I. The Contractor shall be responsible for site safety and for taking all necessary precautions to protect the Contractor's personnel, SAWS and COSA personnel and the public from asbestos exposure and/or injury. The Contractor shall be responsible for maintaining the integrity of the work area.
- J. The Contractor shall confine operations at the site to the area requiring disturbance of AC pipe and the general site area associated with the proximity of the project. Portions of the site beyond areas on which the indicated work is required are not to be disturbed. The Contractor will not unreasonably encumber the site with materials or equipment. If asbestos containing waste materials are required to be stored overnight, it will be properly labeled, secured, and containerized to preclude unauthorized disturbance of the waste materials.
- K. The Contractor shall be responsible for the transport and disposal of asbestos containing waste materials to a duly licensed landfill facility permitted to accept asbestos waste. The Contractor shall be responsible for obtaining and coordinating waste disposal authorization from a TCEQ licensed landfill. Waste manifests shall be used to transport the AC pipe from the project site to the final landfill disposal site. The Contractor will sign manifests as the SAWS's representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.

3000.6 Site Security

- A. The Contractor shall demarcate the area of AC pipe disturbance ("regulated area") with barrier tape and warning signs, as per OSHA regulation 29 CFR 1926.1101. Access to the regulated area will be limited to only authorized personnel. Authorized personnel will have to have asbestos awareness training, respiratory training, etc. including SAWS and COSA personnel.
- B. Entry into the work area by unauthorized individuals shall be reported immediately to SAWS and COSA representatives by the Contractor.
- C. A logbook shall be maintained immediately outside of the regulated area. Anyone who enters the regulated area must record name, affiliation, time in, and time out for each entry

3000.7 Personal Protective Equipment

- A. All work which will or may disturb asbestos-containing materials as specified shall be accomplished utilizing, as a minimum disposal suits with protective head cover, gloves, boots, eye protection, proper respiratory protection, decontamination by HEPA vacuuming and/or wet methods and wet wiping all equipment. The Contractor shall provide hard hats and/or other protection as required for job conditions or by applicable safety regulations. Disposal suits consisting of material impenetrable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing. Workers will be provided protective clothing from the time of first disturbance of asbestos-containing or contaminated materials until final cleanup is completed.
- B. Respiratory Protection: The Contractor shall use removal techniques, methods and equipment which will not permit the fiber count to exceed the OSHA Permissible Exposure Level (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as detected by personal air sampling methods. Any remedial measures taken by the Contractor to meet this requirement will be at the Contractor's expense.
 - 1. The Contractor's Competent Person shall ensure use of the appropriate respiratory protection for the work being performed. For minimum legal respiratory requirements, see OSHA Standards 29 CFR 1910.134, 29 CFR 1910.1001, and 29 CFR 1926.1101. All respiratory equipment, such as respirators, filters, etc. shall be

- certified by the National Institute of Occupational Safety and Health (NIOSH) for use in asbestos contaminated atmospheres.
- 2. The Contractor's Competent Person shall perform an Initial and/or Negative Exposure Assessment, which shall be performed on employees who have been trained in compliance with the OSHA regulations. Employees' exposures shall be collected using objective data that is to demonstrate whether the materials specified for removal can release airborne fibers in concentration levels exceeding 0.1 fibers per cubic centimeters (f/cc) during an eight-(8) hour time weighted average (TWA) and the excursion limit of 1.0 f/cc. For the purpose of the assessment, the work conditions should be those having the greatest potential for releasing asbestos fibers. Removal methods using conventional hand tools shall be performed in an area that requires a minimum of a seven-(7) hour work shift with employees performing functions normally required for a total project. Removal, for the purposes of the assessment, should be performed with methods most likely to release fibers and that do not render the asbestoscontaining materials friable. Properly trained employees shall wear proper protective clothing and respirators during the assessment. Initial and/or Negative Exposure Assessments shall be performed in accordance with OSHA Standard 29 CFR 1926.1101.

The development of the Health & Safety Plan by the Contractor's TDH licensed Asbestos Consultant shall include determining the adequacy of the Contractor's air monitoring data (which must performed within the previous 12 months of the project start date) for the Initial and/or Negative Exposure Assessment, based in part on site-specific factors such as changes in personnel or work methods used during AC pipe removal. If this type of air monitoring data needs to be reviewed during the course of a project, the Contractor's Asbestos Consultant shall review the data in order to determine if it is adequate. Any downgrade in personal protective equipment related to asbestos exposure shall be requested in writing to SAWS Health & Safety Department, the COSA Environmental Services Department, and approved by a TDH licensed Asbestos Consultant. This request may be granted only when all regulations and pertinent sections of this special specification for respiratory protection are met.

3. The Contractor shall begin AC pipe removal operations (i.e., breaking, sawing, cutting, or repairing the pipe) in powered air purifying respirators (PAPRs) equipped with dual HEPA filters. PAPRs will be utilized until such time that air monitoring results indicate that half-face respirators may be used. Any changes

(downgrade or upgrade) in respiratory protection will be based upon an 8-hour time weighted average (TWA) of fiber concentrations in the regulated area. Eight hour TWA's will be calculated daily by the Contractor's OSHA monitoring firm, for personal samples. The highest calculated 8 hour TWA shall be used to determine the type of respirator to be worn. The type of respirators worn will be selected in accordance with 29 CFR 1926.1101 (h) (3).

The Contractor may request a respiratory protection downgrade, approved by a TDH licensed Asbestos Consultant, in writing to SAWS Health & Safety Department and COSA Environmental Services Department when all regulations and pertinent sections of this special specification for respiratory protection are met.

- 4. Workers shall be provided with personally issued, individually identified respirators.
- 5. No one wearing a beard shall be permitted to wear a respirator.

110.8 Air Monitoring

- A. Personal Air Monitoring: The Contractor shall provide personal air sampling as required by OSHA regulations. The OSHA TWA permissible exposure limit (PEL) for asbestos (0.1 f/cc) shall not be exceeded. Personal air samples shall be obtained by a TDH licensed Asbestos Air Monitoring Technician and analyzed by an accredited, independent TDH licensed Phase Contrast Microscopy (PCM) laboratory. OSHA monitoring results shall be posted at the project site and made available to all affected Contractor personnel on a daily basis.
- B. The Contractor shall provide, as a minimum, personal air monitoring on each worker who is cutting, (wet) sawing, breaking, or repairing the AC pipe.
- C. Area Air Monitoring: At any time that visible airborne fibers are generated or that wet work procedures are not used, all work will immediately cease until air monitoring by a TDH-licensed Asbestos Consultant Agency has started. The Contractor's on-site Competent Person shall be responsible for making this determination; however, periodic, random site visits by SAWS and COSA Inspectors will field-verify the objectivity of the Competent Person in these matters. Once initiated, the sampling and frequency of the area air monitoring will be dependent upon on the specific work practices being used by the workers at that time. However, the area air monitoring shall include, as a minimum, samples collected

inside the regulated area, and upwind and downwind of the regulated area. The TDH licensed Asbestos Consultant Agency hired by the Contractor shall determine the need for additional samples and shall amend the Health & Safety Plan (with a copy to SAWS and COSA) to include sampling protocols.

- D. Area air monitoring shall be conducted in accordance with applicable Federal, State, and local requirements. The cost of area air monitoring due to failure to use adequate wet work procedures will be borne by the Contractor. Copies of all results will be provided to SAWS Environmental Division and COSA Environmental representatives.
- E. Area air sampling shall be mandatory in high density areas such as schools, residential areas, and certain other locations as determined by SAWS Environmental Division and COSA Environmental representatives and made clear in individual SAWS bid documents/plans.

3000.9 Employee Training

- A. Training shall be provided by the Contractor to all employees or agents who may be required to disturb asbestos containing or asbestos contaminated materials for AC pipe handling and auxiliary purposes and to all supervisory personnel who may be involved in planning, execution or inspection of such projects. The training shall be in accordance with OSHA Standard 29 CFR 1926.1101 for "Class II asbestos work".
- B. At a minimum, Contractor employees who will be potentially exposed to asbestos shall have completed within the last 12 months, an 8-hour Asbestos Awareness training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos and work practices related to the handling of AC pipe.
- C. The Contractor's Competent Person shall have completed within the last 12 months, a 40-hour Asbestos Contractor Supervisor training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos, employee personal protective equipment, medical monitoring requirements for workers, air monitoring procedures and requirements for workers, work practices for asbestos abatement, personal hygiene procedures, special safety hazards that may be encountered, and other topics as required.

3000.10 AC Pipe Handling:

A. General: The Contractor shall properly remove, handle, transport and dispose of all AC pipe specified in the SAWS bid documents/plans for this project. All work involving AC pipe and other ACM products must be addressed in Health and Safety Program documents submitted to SAWS and COSA representatives. To comply with the SAWS and COSA Project Construction Health and Safety Program, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety Program plans are to include provisions for the discipline of any worker failing to use wet work procedures or failing to use designated personnel protective equipment.

The Contractor shall remove ACM with wet methods or by other controlled techniques approved by the TDH, EPA, and OSHA and in accordance with these specifications and the Contractor-provided Health & Safety Plan. Alternative removal methods must be approved at time of the Contractor's submittals. The Contractor shall take special care to prevent damage to the adjacent structures, materials and finished materials not required for demolition to access ACM.

The Contractor shall limit his use of the premises to the work area indicated. Access to the work area shall be controlled by the Contractor. All electrical equipment, etc., shall have ground fault circuit interrupter (GFCI) protection. The Contractor shall properly demarcate, barricade and contain the work and/or regulated areas.

The work consists of providing GFCI protection, the use of approved equipment with engineering controls, sufficiently wetting the asbestoscontaining materials using a surfactant or lock-down encapsulant, removing the asbestos-containing materials, HEPA vacuuming the work area, wet wiping the work area, double-bagging/double-wrapping the waste and removing carefully as indicated herein and in accordance with the Contractor-provided Health & Safety Plan.

B. Equipment: Equipment used to cut, break, or otherwise disturb AC pipe and associated asbestos-containing materials may include, but are not limited to: wet-cutting saws, saws equipped with point of cut ventilator (saw equipped with a water mister) or enclosures with HEPA filtered exhaust air, snap cutters, manual field lathes, pressure and non-pressure tapping devices.

Equipment used to either control visible emissions of fibers, contain the work area, or facilitate the clean-up of debris may include, but are not limited to: airless spray equipment, pump-up sprayers, surfactant, lock-down encapsulant, HEPA vacuums, brushes, brooms, shovels, disposable

rags, polyethylene sheeting of 6-mil thickness, moisture resistant duct tape, asbestos warning signs, notices and barrier tape.

Alternative dismantling equipment may be substituted for the materials indicated herein, but must be approved by the SAWS Health & Safety Office and/or COSA Environmental Service Department.

- 1. <u>Prohibited Work Practices and Engineering Controls</u>: the following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM, regardless of asbestos exposure or the results of Initial Exposure Assessments:
 - a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
 - b. Other high-speed abrasive tools, such as disk sanders.
 - c. Carbide-tipped cutting blades.
 - d. Electrical drills, chisels, and rasps used to make field connections in AC pipe.
 - e. Shell cutters used to cut entry holes in AC pipe.
 - f. A hammer and chisel used to remove couplings or collars on AC pipe.
 - g. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud generated by the compressed air.
 - h. Dry sweeping, dry shoveling or other dry clean-up of dust and debris containing ACM.
 - i. Employee rotation as a means of reducing employee exposure to asbestos.
- C. General Removal Work Practices: AC pipe has been identified as a non-friable ACM with the potential to become friable ACM. The material is classified as non-friable, unless broken at which time its classification changes to friable. NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become "regulated asbestos containing material" or RACM. This means that if at least 260 linear feet of the AC

pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. If the generated AC pipe debris is not properly cleaned up. Then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to SAWS and City representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS and COSA representatives by the contractor's consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

In order to comply with SAWS Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, and state requirements. As such, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety plans for working with ACM must address the guidance provided in these special specifications.

- D. A sufficient supply of disposable rags for work area decontamination shall be available.
- E. Disposal bags for RACM shall be of true 6-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.152 (b)(i)(iv) or OSHA requirement 29 CFR 1926.1101(k)(8).

- F. Stick-on labels identifying the Generator's name (SAWS) and address and the project site location shall be applied to any asbestos waste bags that contain RACM, as per EPA or OSHA and Department of Transportation HM 181 requirements.
- G. Work Area Preparation: Post warning signs and barrier tape meeting the specification of OSHA 29 CFR 1910.1001 and 40 CFR 61 at any location and approaches to a location where airborne concentrations of asbestos may exceed the PEL. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Maintain constant security against unauthorized entry past warning signs and barrier tape. Signs will be in both English and Spanish.

H. Personnel exit procedures

- 1. Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet wiping procedures. (Small HEPA vacuums with brush attachments may be utilized for this purpose.) Adequate washing facilities shall be provided and utilized on-site.
- Upon completion of the work, contaminated gloves shall be disposed of as asbestos contaminated waste. Disposable cloth gloves may be substituted for leather gloves, at the Contractor's discretion. (Rubber boots may be decontaminated at the completion of the project.)

I. Specific Removal Work Practice Requirements

- 1. The Contractor has sole and primary responsibility for the "means and/or methods" of the work and obligation to SAWS and COSA to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work.
- 2. The Contractor shall isolate the regulated area with barrier tape and asbestos warning signs.
- 3. The Contractor shall lay and secure 6-mil polyethylene sheeting on the ground on both sides of the AC pipe for the length of the work area.
- 4. Working within the regulated area, using wet removal methods, the Contractor shall thoroughly soak each section of AC pipe to be disturbed, prior to any removal activity, with a surfactant or lock-

down encapsulant. The Contractor shall use equipment capable of producing a "mist" application to reduce the potential for release of fibers. The Contractor shall take care to use as much encapsulant or surfactant as needed in order to lockdown possible fallout debris from edges and joints during removal. Provide continuous wetting of the materials throughout the entire removal process. The Contractor shall take care to limit the breakage of asbestos containing materials and remove these materials as intact as possible.

- 5. Any AC pipe debris on adjacent surfaces shall be removed. The Contractor shall promptly clean up asbestos wastes and debris following AC pipe disturbance. Remove and containerize all visible accumulations of asbestos containing material and asbestos-contaminated debris by hand. Asbestos debris mixed with soil may be picked up with shovels, with the contaminated soil being containerized as a regulated ACM waste. Clean-up activities may also involve vacuum cleaners equipped with HEPA filtration or wet-wiping surfaces with disposable rags. Contaminated rags shall be containerized as a regulated ACM waste.
- 6. After disturbance and clean-up activities and prior to removal of the AC pipe from the regulated area, the Contractor shall encapsulate damaged and exposed areas and ends of the AC pipe with a lock-down encapsulant.
- 7. The Contractor may now remove the Category II non-friable asbestos-containing material "that is not in poor condition and is not friable" as defined in NESHAP regulations. The Contractor shall remove all AC pipe "intact" and in whole complete sections by carefully lifting the AC pipe to the disposal container using approved equipment. The Category II non-friable AC pipe must not become "friable" (crumbled, pulverized, or reduced to a powder). The Contractor shall not drop, break and/or otherwise make the AC pipe susceptible to release asbestos fibers. If these procedures are followed and debris is cleaned up properly, then the Category II non-friable AC pipe may be disposed of as nonregulated asbestos-containing waste material.
- 8. Pieces of AC pipe debris shall be considered RACM and handled as regulated ACM waste. The debris shall be placed in two 6-mil asbestos bags or double wrapped, with proper labeling.
- J. Abandonment of AC water mains/pipes: The Contractor is responsible for isolating the existing mains to remain in service by capping, plugging and blocking as necessary. The opening of an abandoned ac water main and all

other openings or holes shall be blocked off by manually forcing cement grout or concrete into and around the openings in sufficient quantity to provide a permanent watertight seal. Abandonment of old, existing AC water mains will be considered subsidiary to the work required, an no direct payment will be made.

- L. Abandonment of Valves that contain ACM: Valves to be abandoned in the execution of the work shall have the valve box and extension packed with sand to within eight (8") inches of the street surface. The remaining eight (8") shall be filled with 2,500 psi concrete or an equivalent sand-cement mix and finished flush with the adjacent pavement or ground surface. The valves covers shall be salvaged and return to SAWS. The abandonment of valves containing ACM will be considered subsidiary to the work required, and no direct payment will be made.
- M. Verification of Removal & Clean-up Procedures: The Contractor's on-site Competent Person shall inspect the work area and ensure that all surfaces are free of AC pipe dust and debris.

N. Disposal Procedures

- 1. If a dumpster/trailer is used for temporary storage it will be secured and closed at all times except when loading. It will be properly marked and critical barrier tape will be in place.
- AC pipe debris and asbestos-contaminated items shall be properly double bagged, labeled and loaded in a fully enclosed, lined, locked and placard transport container and transported and disposed of in compliance with all regulatory requirements as RACM.
- 3. After being removed from the regulated area, Category II non-friable AC pipe shall be transferred to a polyethylene-lined container. Remove all containers as soon as practical, but no later than the end of the work shift.
- 4. When the dumpsters/trailers are full, they will be hauled away to the closest EPA approved landfill for proper disposal. The Contractor may dispose of the Category II non-friable AC pipe waste material as non-regulated waste in a municipal solid waste landfill as defined in the NESHAP and TCEQ Rule (Type I Landfill). Written approval to transport and accept the Category II non-friable material shall be obtained from a pre-approved transporter and landfill and submitted to SAWS Environmental

Division and COSA Environmental representatives prior to disposal.

- 5. Submit copies to SAWS Environmental Division and COSA Environmental representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.
- 3000.11 Measurement: Measurement of the items "Asbestos Abatement Work Plan" and "Removal, Transportation, and Disposal" as specified herein shall be by the "lump sum."
- Payment: The work performed as prescribed by these items shall be paid for at the contract lump sum price bid for "Asbestos Abatement Work Plan" and "Removal, Transportation, and Disposal," which prices shall be full compensation for the work herein specified including the furnishing of all materials, equipment, tools and for the material disposal, submittals, labor and air monitoring necessary to complete the work.

3000.13 BID ITEM:

3000.14 - Removal, Transportation, and Disposal – Lump Sum 3000.15 - Asbestos Abatement Work Plan – Lump Sum

STANDARD PLAN NOTE:

Asbestos Cement (AC) pipe, also known as transite pipe and which is known to contain asbestos-containing material (ACM), is located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occur. Payment for such work is to be made under Special Specification Item No 3000, "Special Specification for Handling Asbestos Cement Pipe".

CITY OF SAN ANTONIO DEPARTMENT OF CAPITAL IMPROVEMENTS MANAGEMENT SERVICES CONTRACT SERVICES DIVISION

RECEIPT OF ADDENDUM NUMBER(S) 6 IS HEREBY A	CKNOWLEDGED FOR PLANS AND
SPECIFICATIONS FOR CONSTRUCTION OF CULEBRA	58F PHASE IIB
FOR WHICH BIDS WILL BE OPENED ON <u>TUESDAY, JU</u>	JNE 14, 2011 AT 2:00 PM
THIS ACKNOWLEDGEMENT MUST BE SIGNEI THE BID PACKAGE.	O AND RETURNED WITH
Company Name:	
Address:	
City/State/Zip Code:	
Date:	
Signature	

Print Name/Title